

## Replacement Sheet

- 25 -

5443899

CLAIMS

1. A predictive dialling system for a call centre including a plurality of agent workstations, each agent workstation comprising:

means for producing signals effective to cause a display to display a script for prompting the agent in a telephone conversation with a telephone respondent;

means for entering information obtained from the telephone respondent in response to questions prompted by the script into the workstation; and

means for producing a series of status signals indicative of the progression of the agent through the script;

the predictive dialling system comprising:

means for storing statistical data regarding the connection of previous telephone calls;

means for progressively receiving the series of status signals produced by each agent station;

means for predicting from the statistical data and those of the series of status signals received at any time how many new calls should be dialled to enable agents who have finished their previous call by the time each new call is answered by a respective telephone respondent to take all the new calls; and

## Replacement Sheet

- 26 -

5443899

means for generating signals effective to cause said new calls to be dialled.

2. A predictive dialling system according to claim 1 including a database system for storing telephone numbers to be called, and a cache for storing a selection of the stored telephone numbers, wherein when the predicting means predicts the number of new calls to be made, the appropriate number of telephone numbers are retrieved from the cache.

3. A predictive dialling system according to either of the preceding claims wherein the statistical data comprises the percentage of successful telephone connections made out of the total number of calls over a predetermined period of time.

4. A predictive dialling system according to any one of the preceding claims wherein the statistical data comprises an indication of the number of calls in excess of the number of available agents which the system can tolerate.

5. A predictive dialling system according to any one of the preceding claims wherein the statistical data

## Replacement Sheet

- 27 -

5443899

includes the ratio of the nuisance call rate to the nuisance call rate target.

6. A predictive dialling system according to any one of the preceding claims in which said means for predicting is arranged to predict the number,  $N_{\text{dial}}$ , of calls from the number of available agents currently not engaged on a call, the number of agents who have currently reached predefined points within a script, the percentage of successful connections out of the total number of calls made in a predetermined time period, the percentage of successful connections out of the total number of calls made over a predetermined time period, and the percentage of calls answered with no agent available to take the call over a predetermined time period.

7. A predictive dialling system according to claim 6 wherein

$$N_{\text{dial}} = I + \frac{\alpha I + \beta R + \chi A + \delta G}{S_r(\theta + \tan(\frac{\pi N_r}{2N_t}))}$$

where  $I$  is the number of available agents currently not engaged on a call;

$R$ ,  $A$  and  $G$  are the number of agents who have reached

## Replacement Sheet

- 28 -

5443899

predetermined points in their respective scripts and have sent said status signals to the predictive dialling system;

$\alpha, \beta, \chi, \delta$  are constants;

5  $S_r$  is the percentage of successful connections out of the total number of calls made measured over a predetermined time period;

$\theta$  is an adjustment constant;

10  $N_r$  is the percentage of calls answered by a telephone respondent but with no agent available to take the call measured over a predetermined time period; and

$N_t$  is the target percentage of calls answered by a telephone respondent but with no agent available to take the call.

15

8. A predictive dialling system according to any one of the preceding claims including means for adjusting the parameters used by the means for predicting.

20

9. A predictive dialling system according to claim 8 including means for providing a user interface enabling display of the statistical performance of the system, and means for enabling a user to adjust said parameters.

## Replacement Sheet

- 29 -

5443899

10. A predictive dialling system according to any one of the preceding claims in which where the number of calls which are predicted is less than the calls which are currently being dialled, the system includes means for cancelling some of the calls currently being dialled.

11. A predictive dialling system according to any one of the preceding claims including means for sending a signal to a workstation effective to initiate the running of a new script at the workstation when the workstation has been allocated a new answered telephone call.

12. A scripting system for use in an agent workstation in a call centre, the workstation comprising:

means for receiving telephone calls; and

a display means;

the scripting system comprising:

means for providing signals effective to cause the

display means to display a script for prompting an agent in a telephone call with a telephone respondent;

means for recording information obtained from the telephone respondent and sending signals representative of said information to a storage means;

means for producing a series of status signals

## Replacement Sheet

- 30 -

5443899

representative of the progression of the agent through the script; and

means for progressively sending said series of status signals to a predictive dialling system.

5

13. A scripting system according to claim 12 including means for receiving signals from the predictive dialling system effective to initiate the display of a new script synchronised with the receipt of a new telephone call.

10

14. A predictive dialling method for a call centre including a plurality of agent workstations, each agent workstation performing the steps of:

15

producing signals effective to cause a display to display a script for prompting the agent in a telephone conversation with a telephone respondent;

entering information obtained from the telephone respondent in response to questions prompted by the script into the workstation; and

20

producing a series of status signals indicative of the progression of the agent through the script;

the predictive dialling method comprising:

storing statistical data regarding the connection of previous telephone calls;

25

progressively receiving the status signals produced

## Replacement Sheet

- 31 -

5443899

by each agent station;

predicting from the statistical data and those of the series of status signals which have been received at any time how many new calls should be dialled to enable agents who have finished their previous call by the time each new call is answered by a telephone respondent to take all the new calls; and

generating signals effective to cause said new calls to be dialled.

15. A predictive dialling method according to claim 13 including storing telephone numbers to be called in a database system, and storing a selection of the stored telephone numbers in a cache, wherein when the predicting means predicts the number of new calls to be made, the appropriate number of telephone numbers are retrieved from the cache.

16. A predictive dialling method according to claim 14 to 15 wherein the statistical data comprises the percentage of successful telephone connections made out of the total number of calls over a predetermined period of time.

17. A predictive dialling method according to any one of

## Replacement Sheet

- 32 -

5443899

claims 14 to 16 wherein the statistical data comprises an indication of the number of calls in excess of the number of available agents which the system can tolerate.

5 18. A predictive dialling method according to any one of claims 14 to 17 wherein the statistical data includes the ratio of the nuisance call rate to the nuisance call rate target.

10 19. A predictive dialling method according to any one of claims 14 to 18 in which where the number of calls which are predicted is less than the calls which are currently being dialled, cancelling some of the calls currently being dialled.

15 20. A predictive dialling method according to any one of claims 14 to 19 in which said predicting step predicts the number,  $N_{\text{dial}}$ , of calls from the number of available agents currently not engaged on a call, the number of  
20 agents who have currently reached predefined points within a script, the percentage of successful connections out of the total number of calls made in a predetermined time period, the percentage of successful connections out of the total number of calls made over a predetermined  
25 time period, and the percentage of calls answered with no



## Replacement Sheet

- 33 -

5443899

agent available to take the call over a predetermined time period.

21. A predictive dialling method according to claim 20  
5 wherein

$$N_{\text{dial}} = I + \frac{\alpha I + \beta R + \chi A + \delta G}{S_r(\theta + \tan(\frac{\pi N_r}{2N_t}))}$$

where I is the number of available agents currently not engaged on a call;

10 R, A and G are the number of agents who have reached predetermined points in their respective scripts and have sent said status signals to the predictive dialling system;

$\alpha, \beta, \chi, \delta$  are constants;

15  $S_r$  is the percentage of successful connections out of the total number of calls made measured over a predetermined time period;

$\theta$  is an adjustment constant;

20  $N_r$  is the percentage of calls answered by a telephone respondent but with no agent available to take the call measured over a predetermined time period; and

$N_t$  is the target percentage of calls answered by a telephone respondent but with no agent available to take

## Replacement Sheet

- 34 -

5443899

the call.

22. A predictive dialling method according to any one of claims 14 to 21 including the step of sending a signal to a workstation effective to initiate the running of a new script at the workstation when the workstation has been allocated a new answered telephone call.

23. A scripting method in an agent workstation in a call centre, the workstation comprising:

means for receiving telephone calls; and

a display means;

the scripting method comprising the steps of:

providing signals effective to cause the display means to display a script for prompting an agent in a telephone call with a telephone respondent;

recording information obtained from the telephone respondent and sending signals representative of said information to a storage means;

producing a series of status signals representative of the progression of the agent through the script; and

progressively sending said status signals to a predictive dialling system.

24. A scripting method according to claim 23 including

## Replacement Sheet

- 35 -

5443899

the step of receiving signals from the predictive dialling system effective to initiate the display of a new script synchronised with the receipt of a new telephone call.

5

25. A computer program including processor implementable instructions for performing a method according to any one of claims 14 to 24.

10

26. A computer program product carrying a computer program according to claim 25.

15

27. A predictive dialling system substantially as hereinbefore described with reference to the accompanying drawings.

28. A predictive dialling method substantially as hereinbefore described with reference to the accompanying drawings.